Name: Rachel Fischhoff Grade: 5 Date:

The Olympics

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| Lesson Sources: The California Frog-Jumping Contest, Jacob and Fosnot |
| Lesson Objectives: Students will be able to use *variables* on a number to solve problems by expanding on previous experience using unmarked number lines and labeling unknown jumps with a variable (j). |
| Standards: |
| Multicultural Content: |
| Materials and Advanced Preparation: worksheets for the three competitions |
| Prior Knowledge and Skills Needed: unmarked number line practice, understanding of how variables work (ie represent an unknown quantity, remain contstant) |
| Key/New Vocabulary: variable—a symbol or letter used by mathematicians to represent an unknown amount/quantity |

Lesson Procedure: Part One

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| **Time** | **Teacher Actions** | **Student Learning Activities** | **Form of Assessment** |
| 1 min | **1. Connection**   * Mathematicians, in previous lessons, we have explored using an unmarked number line to represent jumps—even when we don’t know yet how big or small those jumps are. We have also used letters to represent these jumps (Reference original jumping buddies poster with j’s). Today, we are going to use variables—letters or symbols mathematicians use to represent unknown quantities/values. | Explain purpose of mini-lesson |  |
| 10 min max | **2. The Teaching (The Giving of Information):**   * Problem string: (this could be a great one to do on the SmartBoard with kids following along in their own nbs) * Here is an unknown amount on a number line. I’ll call it j. * Where is 2 times j? * Where is 2 times these 2 js? * Where is 4 j + 6? * Where is 4j – 6? * Suppose I tell you that 4j-6 is the same as 2j. What now? * How about 2j – 3? Where is that? Why? * What if I told you that 4j – 6 is the same as 3j. What now? * Where is 2j-3? Why? | * Some share up at board * All follow along in own notebook | * Student responses |
|  | **3. Have-A-Go (optional)**  in problem string | How will students be actively involved?  By:   * Practicing the mini-lesson * Partner Talk * Planning their day’s work | * How will you assess students’ understanding of the teaching? * How will you give feedback? |
| **Anticipated Responses/Outcomes:**   * This level of abstraction could be challenging for some students * Lean into previous encounters with this idea—from jumping buddies | | | |
|  | **4. The Link**   * Mathematicians, today you are going to continue your work as frog jumping referees. You will find the winners of the frog jumping Olympics events. * (All students can start with the Pair problem, if completed, move on to next problems) | **(Workshop Time)**   * All students should employ the number line with variables strategy | * Confer with students, make sure they are using today’s strategy |
|  | **5. Closing (at the share)**  Process students—where are students? How are they applying the idea of variables? | * Share work examples | * Reiterate how variables work/why mathemeaticians use them |
| **Anticipated Responses/Outcomes:**   * Stronger students will have an easier time using variables *and* understanding how to move between the number line and expressions that include variables—check in with that transition during workshop. | | | |

**Reflections:**

How did the lesson plan work? What was effective? What did you learn? What would you change for tomorrow or the next time you will use this plan?